8. Kinga

Program Name: Kinga.java   Input File: kinga.dat

Kinga knows that boolean variables are those that are either true or false, often represented as 1 or 0. In combination, two variables can have four possibilities, as shown in the table below.

```
A|B
0|0
0|1
1|0
1|1
```

She decides to write a program to output all possible combinations for up to nine variables, in table format, starting with all zeroes on the top row, and all 1s on the bottom row. She decides on the output format shown below, with A, B, C, and so on representing the variables, 0 for false, 1 for true, and the correct sequence of combinations in logical order. Columns are separated by the "|" symbol. Her input data will consist of one integer, between 1 and 9, inclusive, representing the number of boolean variables.

Input: Several integers N, 1<=N<=9.

Output: The corresponding Boolean truth table representing all possible true/false combinations, as described above and shown in the examples below. Print a final "=====" line below each complete output.

Sample input:
```
3
4
```

Sample output:
```
  A|B|C                          A|B|C|D
1 0|0|0                       1  0|0|0|0
2 0|0|1                       2  0|0|0|1
3 0|1|0                       3  0|0|1|0
4 0|1|1                       4  0|0|1|1
5 1|0|0                       5  0|1|0|0
6 1|0|1                       6  0|1|0|1
7 1|1|0                       7  0|1|1|0
8 1|1|1                       8  0|1|1|1
=====                         9  1|0|0|0
                              10 1|0|0|1
                              11 1|0|1|0
                              12 1|0|1|1
                              13 1|1|0|0
                              14 1|1|0|1
                              15 1|1|1|0
                              16 1|1|1|1
                              =====
```